

REMARKS

In the Office Action mailed February 27, 2006, the Examiner noted that claims 1-34 were pending, allowed claims 1-17, 31 and 34, objected to claims 20 and 30 and rejected claims 18, 19, 21-29, 32 and 33. Claims 18, 20, 23, 24, 27, 30 and 32 have been amended, claim 21 has been canceled, new claims 35 and 36 have been added and, thus, in view of the forgoing claims 1-20 and 22-36 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections and objections are traversed below.

In the Office Action the Examiner objected to claims 20 and 30 and indicated that these claims would be allowable if rewritten in independent form. These claims have been so rewritten and it is submitted that these claims have not been narrowed and have the same scope as prior to being made independent and are now allowable. Withdrawal of the objection is requested.

In the Office Action the Examiner rejected claims 21 and 32 under 35 U.S.C. section 112 paragraph 2 as indefinite. Claim 32 has been amended in consideration of the Examiner's comments and it is submitted that it satisfies the requirements of the statute. If additional concerns with the claims arise, the Examiner is invited to telephone to resolve the same. Suggestions by the Examiner are also welcome. Withdrawal of the rejection is requested.

Page 5 of the Office Action rejects claims 18, 19, 21 and 24-26 under 35 U.S.C. § 103 over Yamron and Glassner. The present invention of independent claims 18 and 24 is designed to speed up the search for an intersection with a mesh surface by essentially reducing the size of the search. This is done by using a tessellation as a linking data structure. The tessellation can be collection of polyhedra that can fill the space between the various surfaces. For example, in 3D, surfaces are made of triangles, and a tessellation can be made of tetrahedra that can fill the space between two surfaces. Yamron and Glassner do not teach or suggest using a tessellation. Claim 19 depends from claim 18 and claims 25 and 26 depend from claim 24. It is submitted that the invention of claims 18, 19 and 24-26 distinguishes over the prior art and withdrawal of the rejection is requested.

Page 8 of the Office Action rejects claim 23 under 35 U.S.C. § 103 over Newhall. Claim 23 has also been amended to emphasize the use of a tessellation. Newhall also does not teach or suggest using a tessellation. It is submitted that the invention of claim 23 distinguishes over the prior art and withdrawal of the rejection is requested.

Page 9 of the Office Action rejects claims 27-29 under 35 U.S.C. § 103 over Khan and Reed. Claim 27 has also been amended to emphasize the use of a tessellation. Khan and

Reed, like the other prior art, also do not teach or suggest using a tessellation. Claims 28 and 29 depend from claim 27. It is submitted that the invention of claims 27-29 distinguishes over the prior art and withdrawal of the rejection is requested.

Page 9 of the Office Action rejects claims 32 and 33 under 35 U.S.C. § 103 over Suzuki. Claim 32 has also been amended to emphasize the use of a tessellation. Suzuki, like the other prior art, also does not teach or suggest using a tessellation. Claim 33 depends from claim 32. It is submitted that the invention of claims 32 and 33 distinguishes over the prior art and withdrawal of the rejection is requested.

New claim 35 emphasizes that the details of the intersection with the outer bounding surface along with the outer bounding surface and the tight inner surface are used to determine the intersection with the original mesh surface. This is in contrast to Glassner who finds the details of the intersection with the outer bounding to be "useless" (see Glassner, page 61, left col. line 44+. New claim 36 emphasizes that a tessellation between the outer bounding surface and the original mesh surface is used to find the intersection. As noted above, the prior art does not teach or suggest such. It is submitted that these new claims, which are different and not narrower than prior filed claims, distinguish over the prior art.

It is submitted that the claims satisfy the requirements of 35 U.S.C. 112. It is also submitted that claims 1-17, 20, 30, 31, and 34 continue to be allowable. It is further submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

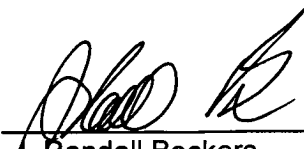
Respectfully submitted,

STAAS & HALSEY LLP

Date:

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By:



J. Randall Beckers
Registration No. 30,358

1201 New York Avenue, NW, 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501